

Controlling Spatiotemporal Chaos in Coupled Map Lattices to Periodic Orbits

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Abstract: Two methods are presented for controlling spatiotemporal chaotic motion in coupled map lattices to a kind of periodic orbit where the dynamical variables of all lattice sites are equal and act periodically as time evolves. Stability analysis of the periodic orbits is presented. We prove that especially the second controlling method can stabilize all the periodic orbits we concern. Basin of attraction and noise problem are discussed.

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Key words: spatiotemporal chaos, controlling, coupled map lattices

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